

Child Care Assistance for Families Involved in the Child Welfare System:
Predicting Child Care Subsidy Use and Stability

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Abstract

Early child care and education programs have the potential to play a supportive role in the lives of vulnerable children and families involved in the child welfare system. Child care subsidies can help low-income families to access these programs. The current study examines the use and stability of child care subsidies among children from families involved in the child welfare system. Administrative data were obtained from the Oregon Department of Human Services through two linked datasets: Child Welfare Services and Employment Related Day Care (Oregon's child care subsidy program). Results indicate that children placed out of their biological homes through child welfare services, and those with more instability in child welfare placements, are less likely to receive subsidized child care than those protected in their homes. Findings further suggest that children involved in child welfare services have even less stability in child care subsidy use than other children from low-income families, evidenced by shorter durations of subsidy use. These findings provide a platform for future research in this area, and have implications for the well-being of children and families involved in child welfare services, whose lives involve a host of challenges, risks, and instabilities.

Child Care Assistance for Families Involved in the Child Welfare System:
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The Child Care Development Fund (CCDF), which provides subsidies for low-income families to purchase child care, is the federal government's largest child care program, serving more than 1.6 million children in 2009 (United States Department of Health and Human Services (US-DHHS), 2010). The purpose of the CCDF is to facilitate employment and to promote positive child development for low-income families (Adams & Rohacek, 2002, 2010; US-DHHS, 2011a). Without child care subsidies many low-income families cannot afford to work (Ahn, 2012; Ha & Meyer, 2010; Henly & Lyons, 2002). Child care subsidies may also have implications for the development of children in families receiving these subsidies.

Decades of research show that child care experiences have effects on children's development across a wide variety of areas including academic, psychosocial, and behavioral functioning (Belsky et al. 2007; Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Magnuson, Meyers, & Waldfogel, 2007; National Institute of Child Health and Human Development Early Child Care Research Network (NICHD ECCRN), 2005; Schweinhart, Barnes, & Weikart, 1993). However, the size and direction (positive vs. negative) of these effects depends on children's actual experiences in care, including type, quantity, quality, and stability of care (Belsky et al., 2007; Herbst & Tekin, 2010a, 2010b; McCartney, Dearing, Taylor, & Bub, 2007; NICHD ECCRN, 2005; Vandell, Belsky, Burchinal, Stenberg, & Vandergrift, 2010). For example, frequent changes in child care arrangements are linked with negative social, emotional, and cognitive outcomes (e.g. Bacharach & Baumeister, 2003; Howes & Hamilton, 1993; Huston, Chang, & Genntian, 2002; Loeb, Fuller, Kagan, & Carrol, 2004; Whitebrook, Howes, & Phillips, 1990).

Financial assistance to purchase child care, through governmental subsidies, have been linked with characteristics of care, including type, quality, and stability (e.g. Adams & Rohacek, 2002; Adams, Rohacek, & Snyder, 2008; Ertas & Shields, 2012; Jones-Branch, Torquati, Raikes, & Edwards, 2004), suggesting that child care subsidies have implications for the developmental trajectories of the children whose families utilize them. However, little is known about subsidy use, or its implications, for children from special populations of particularly high risk. The current study contributes to this work by examining the use and stability of child care subsidies among an important high-risk group of families: those involved in the child welfare system.

1.1 Stability of Child Care Subsidies

Stability is at the forefront of current research on child care subsidies. Numerous studies have found that child care subsidy receipt is usually unstable--involving short and sporadic spells (Adams, Snyder, & Sandfort, 2002; Adams et al., 2008; Chaudry, 2004; Davis, Grobe, & Weber, 2010; Grobe, Weber, & Davis, 2008; Ha, & Meyer, 2010; Meyers, Heintze, & Wolf, 2002; Washington & Reed, 2008). Across states, the median length for receipt of child care subsidies has ranged from three months to seven months (Meyers et al. 2002). While many families return for another period of subsidy use, it is typically for another short spell (Meyers et al., 2002).

Short durations of child care subsidies may have implications for the stability of both children's (subsidized) child care arrangements and parents' employment, and by extension for the well-being of children in families receiving child care subsidies. Exits from child care subsidy programs have been linked with disruptions in children's actual care arrangements (Adams & Rohachek, 2002, 2010; Lowe, Weisner, & Geis, 2003; Weber, 2005). As noted earlier in Section 1, instability in child care arrangements is associated with negative outcomes for children. The stability of subsidized child care has also been linked with stability of parental

employment (Blau & Robbins 1991; Hofferth & Collins, 2000; Meyers et. al., 2002; Scott, Leymon, & Abelson, 2011), although the direction of association is not clear and is likely to be reciprocal. Poverty, often triggered by parents' unemployment, underemployment, and inconsistent employment, can have lasting effects on children's development across a wide array of developmental areas (e.g. NICHD ECCRRN, 2005). Thus, evidence suggests multiple implications of child care subsidy stability for child and family well-being.

1.2 Children Involved in Child Welfare

Access to child care, and stability in the use of child care subsidies, may be particularly important for children from high-risk families, such as those involved in the child welfare system. Children from families involved in the child welfare system have elevated rates of family risk factors such as poverty (Drake & Pandey, 1996), substance abuse (Gibbons, Barth, & Martin, 2012; Barth et al., 2005; Magura & Laudet, 1996; Wollock & Magura, 1996), and mental illness (Mullick, Miller, & Jacobsen, 2001). Children in these families also have higher rates of premature birth, low birth weight (McGuinness, & Schneider, 2007; Needell & Barth, 1998) and prenatal exposure to substances (Astley, Stachowiak, Clarren, & Clausen, 2002; McGuinness & Schneider 2007; Semidei, Radel, & Nolan, 2001). Children in foster care also typically have a history of maltreatment, neglect, domestic violence, and/or physical or sexual abuse (Bruce, Fisher, Pears, & Levine, 2009; Chernoff, Combs-Orm, Risley-Curtiss, & Heisler, 1994; Dicker, Gordon, & Knitzer, 2001; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004; Pears, Kim, & Fisher, 2008; Vig, Chinitz, & Shulman, 2005). As a result of these adverse experiences, children who become involved with the child welfare system are at-risk for developmental, mental, and physical health problems, as well as altered neurophysiology and insecure/ disorganized

attachment orientations (Burns et al., 2004; Cicchetti, 2007; Fisher & Kim, 2007; Oosterman, Schipper, Fisher, Dozier, & Schuengel, 2010; Stahmer et al., 2005).

Clearly, children involved in the child welfare system have enormous needs for services and supports. The federal government has mandated that children ages birth to three years of age in the child welfare system have access to early intervention services, which address specific needs, such as developmental delays, of young children as distinct from childcare services (Zimmer & Panko, 2006, P.L. 111-320). Many children, however, do not receive the services for which they are eligible. Findings from the National Survey of Child and Adolescent Well-Being (NSCAW) showed that 65% of children involved in child welfare that exhibited behavioral problems did not receive a single mental health service; 63% of children identified as in need of special education services did not have an active Individual Education Plan (Research Triangle Institute, 2008). In contrast to low utilization of intervention services, evidence suggests relatively high rates of attendance in early child care and education programs for children involved in child welfare. Descriptive data from NSCAW indicate that nearly two-thirds of children under the age of five, and between 55 and 59% of preschool-aged children involved in the child welfare system are enrolled in some type of child care program (Ward, Yoon, Oldham, Atkins, Morris, & Wathen, 2009). Data from the NSCAW also indicate that among preschoolers who are enrolled in a child care program, more than half attend Head Start (Meloy & Phillips, 2012a). Another recent study found that 88% of a sample of children in foster care in Oregon attended a center-based child care or preschool program before entering Kindergarten (Lipscomb & Pears, 2011). These studies were limited to center-based early care and education programs; combined with non-center care, the overall percentage of attendance is likely to be even higher.

The reasons for high rates of enrollment of children from families involved in the child welfare system in child care and preschool programs may be due, at least in part, to its role in supporting parental employment; this is compared with low rates of accessing other services that are provided more directly for children. Yet until recently, the role of child care, and child care subsidies in particular, in the lives of children and families who become involved with the child welfare system has been largely ignored (Meloy & Phillips, 2012b). The only other known study of child care subsidies for families involved in child welfare was limited to children in foster care, and was not able to examine stability in subsidy use (Meloy & Phillips, in press). Findings pointed to relatively low rates of subsidy use among foster families but also highlighted a potential supportive role of subsidies with regard to increasing the stability of foster care placements. The current study examines child care subsidy use among all types of families involved in the child welfare system, and then compares the stability of subsidy use within this group of families to that of other families that use child care subsidies.

1.3 Child Care Subsidies among Families involved in Child Welfare

Identifying predictors of child care subsidy use is important, given the potential role of child care subsidies for parental employment and child development. Yet very little is known about the factors that predict subsidy use for families who are involved with the child welfare system. Several studies have explored predictors of receiving social services more generally among these families. Evidence indicates that children in out-of-home foster care placements (Simms, Dubowitz, & Szilagyi, 2000), particularly children placed in kinship care (Cuddeback, 2004; Leslie, Landsverk, Ezzet-Loftstrom, Tschanns, Sylmen, & Garland 2000), are less likely to receive the services they need than those who remain in their biological homes. Given this evidence of lower service use among children placed out of their biological homes one might

also expect that children who experience multiple placements and transitions within the child welfare system would be even less likely to access services, such as child care subsidies. We are not aware of any prior research that has examined this question.

The stability of child care subsidy use may be of particular importance to children from families involved in child welfare. As a result of often severe early adversity, children in child welfare have a heightened need for stability and consistency in their lives (Harden, 2004). Greater mobility in child welfare placements has been associated with even higher rates of mental, emotional, and behavioral difficulties (e.g. Leslie, Gordon, Ganger, & Gist, 2002; Lewis, Dozier, Ackerman, & Sepulveda-Kozakowski, 2007; Rubin, O'Reilly, Luan, & Localio, 2007; Wulczyn, Hislop, & Harden, 2002). This evidence is particularly worrisome given that placement changes are common in child welfare: one- to two-thirds of foster care placements disrupt at least once within the first two years (Wulczyn, et al., 2002).

Considering that eligibility for child care subsidies is typically tied to parents, children that experience shifts from one home to another (e.g. most of those involved in the child welfare system) may have more instability in child care subsidy use in addition to changes in their home environments. Instability in multiple domains of children's lives has been linked to even greater risk for detrimental effects on developmental outcomes than instability in a single domain (Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Thus, stability of child care subsidy use for families in the child welfare system, in so far as it serves as a marker for the stability of child care experiences, may also be of great importance.

1.4 The Present Study

This study takes a two-part approach, utilizing administrative data from Oregon's Department of Human Services. Eligibility for Oregon's child care subsidy program is based on

parental employment and income. Eligibility criteria are the same for families involved in child welfare (including foster care and other forms of out-of-home care) as they are for others, with eligibility based on the resident parent/caregiver(s). This is not the case in all states. Child care subsidies in Oregon can be used for any type of care, including formal center-based care or family child care, as well as less formal family, friend, and neighbor care as long as providers meet certain criteria, such as either being licensed or exempt from licensing (e.g. because they care for fewer than four children). Subsidy amounts vary according to income, family size, child age, hours in care, and zip code, ranging from approximately \$375 to \$900 per month for full time care (Oregon Department of Human Services, n.d.). In *Part A*, we identify characteristics of families involved in the child welfare system that predict use of child care subsidies. We hypothesized that children protected in their homes would be more likely to access child care subsidies than those in foster care and other types of child welfare placements. We also explored the association between mobility in children's child welfare placements and the likelihood of child care subsidy use. Without prior research in this area we did not specify this as a formal hypothesis but we did generally anticipate that a higher number of child welfare placements would be associated with a lower likelihood of child care subsidy use.

In *Part B*, we compared stability in child care subsidy use among families involved in the child welfare system to those in the larger population of child care subsidy users. It was hypothesized that children from families involved in the child welfare system would exhibit less stable use of child care subsidies than children from other families utilizing child care subsidies.

We present the method and results separately for these two parts, because different (albeit partially overlapping) samples and measures were used to test the separate hypotheses.

Part A: Methods

2.1 Participants and Procedures

Data for this analysis were obtained as de-identified administrative data from the Oregon Department of Human Services through two linked datasets: Child Welfare Services (CW) and Employment Related Day Care (ERDC; Oregon's child care subsidy program). Oregon uses unique individual identifiers to directly link databases. Participants in Part A included all children in the CW database from September 2008 to September 2010 ($n = 27,346$); all data for this group of children regarding CW participation since each child's birth through April 30, 2011 were included. An indicator of whether or not the child attended child care subsidized through ERDC during this study period was also obtained. Data in the CW file included start and end dates for each CW service period. A service period is defined as a period of continuous receipt of child welfare services. Other data fields included placement type, in-home protection and all possible types of out-of-home placements, child age, child race, and geographic data coded according to the Office of Management and Budget (OMB) to determine whether placements were in rural or urban areas.

Children in the CW database had an average age of 5.63 years when their first CW case was opened ($SD = 4.86$). When their CW cases were opened 79.9% of these children were living in urban areas and 20.1% were living in rural areas. Data on the race of this sample was limited, with race unknown/not reported for 45% of the sample. For this reason race was not included as a predictor of child care subsidy use. Of those for whom race data were available, 85% were White, 6% Black, and 2% Asian/Pacific Islander.

2.2 Measures

Child care subsidy use. Each child in the CW database was coded as either 0 (*did not attend subsidized child care during the study period*) or 1 (*attended child care that was subsidized through the ERDC program during the study period*).

Types of CW service placements. Each service period also included a type of service (including adoption, guardianship, in-home care, independent living, substitute care, residential care, kinship foster care, and non-kinship foster care). A categorical variable was made to indicate the child's primary type of care during the entire study period. For example, if a child received only in-home care, his or her primary care type was classified as "in home". These primary care types included in-home only care, foster care (kinship care and/or nonkinship care), other (residential, guardianship, substitute care, and independent living program) care, or mixed care (any combination of the aforementioned types of care).

Number of CW service placements. Children's CW service placements were tracked by the start and end dates of service. A variable was created to indicate the number of CW service placements the child experienced during the study period, with five categories coded as 1 (*1-5 placements*) 2 (*6-8 placements*) 3 (*9-12 placements*) 4 (*13-16 placements*) and 5 (*17 or more placements*). This last category corresponds to three or more standard deviations above the mean number of CW placements).

Covariates. Age (in years) at first CW service placement was calculated from the child's first service start date and date of birth. Population density was coded according to the OMB as 0 (*child lived in an urban area for all CW service placements during the study period*), and 1 (*child lived in a rural area during at least one CW service placement*).

2.3 Analysis

A logistic regression was conducted to predict child care subsidy receipt among children involved in child welfare, using Stata version 12. Predictors included age at entry into child welfare, population density (rural versus urban), number of child welfare service placements, and primary care type. In-home care served as the reference group for foster care, other care, and mixed care.

Part A: Results

3.1 Descriptive Statistics

Overall, children had an average of 4.37 CW service periods (range from 1 to 52; $SD = 4.17$). The majority ($n = 18,107$; 66.24%) of children had a “mixed” primary care type; they experienced more than one type of service placement. Additionally, 8,719 (31.89%) had only in-home care; 144 (0.53%) were only in foster care; and 367 (1.34%) were only in other care placements. Of those in child welfare, 13.65% ($n = 3,731$) accessed the child subsidy program at least once.

3.2 Hypothesis Testing

Results from the logistic regression predicting use of child care subsidies among children involved in child welfare services are presented in Table 1. Age at first child welfare placement was significantly negatively related to the probability of child care subsidy use such that each additional year of age at first placement corresponded to a 0.94 times lower odds of subsidy use ($p < .01$). The number of child welfare placements was also significantly negative related to the likelihood of subsidy use such that higher numbers of placements corresponded to lower probabilities of child care subsidy use ($OR = 0.90$, $p < .01$). Children who experienced only in-home child welfare placements had significantly higher odds of child care subsidy use relative to any of the other types of child welfare placements. The largest difference was found with

children experiencing only foster care placements having only 0.27 times the odds of subsidy use compared to children with in-home only placements ($p < .01$).

Part B: Methods

4.1 Participants and Procedures

Data for this analysis were obtained as de-identified administrative data from the same two linked databases used in Part A: Child Welfare Services (CW) and Employment Related Day Care (ERDC; Oregon's child care subsidy program). The subsample for Part A included all children in the CW database whereas the subsample for Part B included all children in the ERDC database from September 2008 to September 2010 ($n = 50,473$); all data regarding ERDC participation since each child's birth through April 30, 2011 were included. An indicator of whether or not the child had been involved in child welfare services during this study period was also included. Data in the ERDC file included start and end dates for each period of subsidy use, child age, child race, primary language spoken in the home, monthly household income, and geographic data coded according to OMB, identifying rural vs. urban areas.

Children in the ERDC dataset had an average age of 3.02 years when they first accessed subsidized child care ($SD = 2.73$). At the time of their first child care subsidy use, 82% of these children were living in urban and 18% were living in rural areas, as defined by OMB. Data on the race of this sample was limited, with race unknown/not reported for 42.35% of the sample. Of those for whom race data were available, 84% were White, 8% Black, and 4% Asian/Pacific Islander. Ninety-one percent of the sample lived in a household that spoke English as the first language, with 8% speaking Spanish and 1% speaking another language. Household income averaged \$1,396.66 per month ($SD = \645.35).

4.2 Measures

Child care subsidy use and non-use durations. The data on the timing of child care subsidy use is a multiple-spell survival process (See Analysis Section 4.3). We define two types of spells: “in” spells and “out” spells. The beginning of an “in” spell was marked by the start date of a period of child care subsidy use and the “event” was the end date of that use period; the “time-to-event” for an “in” spell was then calculated as duration between the start and end date of that period of subsidy use. The beginning of an “out” spell was marked by the end date of a period of child care subsidy use and the “event” was the start date of a new period of use; the “time-to-event” for an “out” spell was then calculated as the duration between the end date of one use period and the start date of the next use period. All durations were measures in days. Each child in the dataset could have multiple observed “in” and “out” spells and the last spell (be it an “in” or “out” spell) for each child was right-censored at April 30, 2011.

Involvement in the child welfare system. Involvement in the child welfare system was coded as 0 (*not involved in the child welfare system*) and 1 (*involved in the child welfare system*).

Covariates. Covariates were included for each “in” and “out” spell of child care subsidy use. Covariates were allowed to vary across spells. Age (in years, with months represented by decimal points) at the start of each “in” and “out” spell was calculated from the spell start date and date of birth. Population density was coded according to the definition of urban and rural from the OMB, as 0 (*child lived in an urban area*), and 1 (*child lived in a rural area*). Minority language was coded as 0 (*child lived in an English-speaking household*) and 1 (*child lived in a home that primarily spoke a minority language*). Income was measured as the total household income per month, in thousands. Gender was coded as 0 (*male*) and 1 (*female*). For all covariates other than age, the covariate values for “out” spells were set equal to the covariate values of the immediately preceding “in” spell.

4.3 Analysis

A stratified Cox proportional hazard model was used to predict durations of child care subsidy use (“in” spells) and durations of child care subsidy non-use (“out” spells). In the Cox regression model, the log hazard rate for a specific event is modeled as the sum of a baseline log hazard function and a linear combination of the covariates. In our analytic model, we included interaction terms for each covariate with an indicator of spell type (i.e., “in” spell versus “out” spell) so that covariate effects on “in” spell durations could differ from covariate effects on “out” spell durations. After the model estimation, we computed the specific “out” spell covariate effect estimates based on the sum of the coefficients for each covariate (corresponding the effect on “in” spell hazard rates) and the matching interaction term (corresponding to the difference in the effects of that covariate on “in” spell versus “out” spell hazard rates).

One primary advantage of the Cox regression model is that it permits the inclusion of non-informative, right-censored event times. The stratified Cox regression model enables the simultaneous analysis of multiple event times by allowing the baseline hazard function to differ for each spell; that is, the first “in” spell for the participants was specified to have a different baseline hazard than the first “out” spell, the second “in” spell, etc. The covariate effects on the hazard rates were constrained to be the same for all spells of the same type (i.e., equal covariate effects for all “in” spells and equal covariate effects for all “out” spells). We utilized an option in Stata to obtain robust standard errors for the Cox regression coefficients that accounted for nesting of multiple spells within each participant. All models were estimated using the exact marginal likelihood procedure to accommodate event time “ties” (i.e., identical durations) among participants for each spell that were present in the data.

Part B: Results

5.1 Descriptive Statistics

Children had an average of 2.35 “in” spells of child care subsidy use ($SD = 1.69$; range = 1-14). The durations of completed (i.e., not right-censored) “in” spells ranged from 27 days to 3864 days with 75% of the spell durations under 334 days. The Kaplan-Meier estimated median survival time (the time point at which 50% of spells have ended) for all “in” spells was 152 days. The first “in” spell had the largest median survival time of 181 days, with notably smaller median survival times for subsequent “in” spells, e.g., 60 days for the second “in” spell and only 30 days for the third “in” spell. Generally speaking, children involved in child welfare had shorter “in” spell durations, with a median survival time of 91 days for all “in” spells compared to a median survival time of 152 days for children not involved in child welfare. This difference is most apparent for the first “in” spell, with median survival time of 150 days for children involved in child welfare and 182 days for those not involved. “Out” spell durations seem comparable across the two groups and are notably shorter than “in” spells, with the overall median survival time for all “out” spells in each group equal to 32 days.

5.2 Hypothesis Testing

Results from the stratified Cox proportional hazard regression model predicting durations of child care subsidy use and non-use are presented in Table 2. There is a significant difference in the estimated effect of child welfare involvement on “in” spell and “out” spell durations ($p = .03$). For time “in” child care subsidy use, child welfare involvement is significantly positively associated with the hazard rate ($B = 0.21$, $p < .01$, $hRR = 1.23$) such that children involved in the child welfare system have a higher hazard rate of ending “in” spells, which means they have shorter durations of subsidy use, on average, compared to the children not involved in child welfare. In comparison, there was no significant difference between these two groups (child

welfare involvement versus no involvement) in the hazard rate of ending “out” spells which means they have comparable “out” spell durations, on average. For the other covariates, there were no statistically significant differences in effects on “in” spell and “out” spell hazard rates. Further, the child’s age at start of a spell was the only other significant predictor of spell duration. The estimated association for both “in” spells and “out” spells was significant and negative indicating that older ages correspond, on average, to lower hazard rates such that older ages correspond to longer durations of both subsidy use and non-use.

Figure 2 presents the model-estimated adjusted survivor function with centered covariates values for the first, second and third “in” spells (left panel) and “out” spells (right panel). It is clear from this figure that the “out” spells survival times, corresponding to a given survival probability, are much shorter than the “in” spell survival times. One can also see from the figure that for both “in” and “out” spells, the survival times corresponding to a given survival probability decrease as the spell number increases (e.g., the survival times for the second “in” spell are shorter than for the first “in” spell).

Figure 3 further illustrates the effect of child welfare involvement on the subsidy use duration (and the lack of effect on non-use duration). The figure depicts the model-estimated survivor functions for children involved in the child welfare system and those not involved for the first two “in” and “out” spells, adjusted for all other covariates. One can see from this figure that although the model assumes a proportional hazard rate for children involved and non-involved in child welfare for all spells, the relative impact of child welfare involvement on the scale of the survivor function is smaller for the second “in” spell than for the first. Table 3 presents specific points on the Figure 3 plots for the “in” spells; in particular, Table 3 provides the subsidy use duration times corresponding to the model estimated survival rates of 25%, 50%,

and 75%. From this table we can more clearly see what is shown in the left panel plots of Figure 3: the relative differences in “in” spell duration times corresponding to a given survival rate between children involved in the child welfare system and those not involved are smaller for the second “in” spell compared to the first, and are greater within an “in” spell for duration times corresponding to lower survival rates. For example, the model estimates that for a first “in” spell, 25% of children not involved in child welfare will still be using the child care subsidy at 486 days while it only takes the population of children involved in child welfare 336 days to drop to a continuation rate of 25%.

Discussion

Taken together the findings from both parts of the present study documented lower rates of child care subsidy use among children who were placed out of their biological homes through child welfare services and among those who had a higher number of child welfare placements, compared with the other children involved in the child welfare system. Findings further suggest that children who receive child welfare services have more instability in child care subsidy use than other children from low-income families, due to shorter durations of subsidy use. These findings extend the existing knowledge base on the child care subsidy program for low-income families, and build from the only other known study of child care subsidies for families involved in child welfare (Meloy & Phillips, in press). Results also add to a small but growing line of research on the early care and education experiences for children who receive child welfare services.

6.1 Use of child care subsidies among children involved in child welfare

Approximately 14% of the children who were involved with child welfare services during the study period had attended subsidized child care at least once since birth. This rate is

relatively low, as compared to a recent study using data from the Early Childhood Longitudinal Study-Birth Cohort which estimated 30% of income-eligible parents utilized childcare subsidies, nationally (Johnson, Martin, & Brooks-Gunn, 2011). It is consistent with low utilization rates for support services among foster families from prior research (e.g. Ehrle & Geen, 2002; Harden, 2004), and for child care assistance, specifically (Meloy & Phillips, in press). This low rate (14%) of receiving *subsidized* care in the present study stands in contrast to relatively high rates of *use* of child care and preschool programs, more generally, for children involved in child welfare (e.g. Lipscomb & Pears, 2011; Meloy & Phillips, 2012a; Ward et al., 2009). Thus, it is important to understand which families involved in the child welfare system are most likely to access child care subsidies.

Results from the current study suggest that children who are protected in their homes are more likely to attend subsidized child care than are children from all other types of child welfare placements, when controlling for population density and child age. This is consistent with prior evidence that children placed in out-of-home foster care are less likely to access services than those who remain in their biological homes (Cuddeback, 2004; Leslie et al., 2000; Simms et al., 2000). The current study adds child care subsidies to the list of services that are accessed less often by caregivers of children placed outside their biological homes.

One must be cautious not to assume that children and their out-of-home caregivers have less of a need for child care subsidies than biological families. Further research is needed to understand the reasons behind these differences in rates of accessing child care subsidies. A number of explanations are possible, including the higher income for out-of-home caregivers; however, research shows that foster families are often low-income (e.g. Needell & Barth, 1998; Park & Helton, 2010). Income data for the full sample of families involved in child welfare were

not available. Additionally, foster parents may prefer to enroll children in Head Start, for which foster children are eligible regardless of income, rather than to access subsidized child care. The present study was not able to control for Head Start attendance. Yet findings from recent research document the need for community-based child care among foster families. One study identified a subgroup of children in foster care that attended full time (non-Head Start) child care; these children were more likely to be from single-parent kinship foster placements than from other types of foster families (Lipscomb & Pears, 2011). Similarly, another recent study suggested that kinship foster parents access child care subsidies more often than non-kin foster parents (Meloy & Phillips, in press), perhaps because they are more likely to be single parents (NSCAW, n.d.) and to be employed outside of the home (Berrick, Barth, & Needell, 1994). The current study was not able to distinguish between kinship and non-kinship foster placements, yet this overall pattern of results suggests that there may be a need for additional efforts to connect children's out-of-home caregivers with child care subsidies, which would be consistent with research on other service systems. Findings provide a foundation for future research to investigate the reasons behind lower rates of child care subsidy use among children in out-of-home care, which would be important in informing efforts to effectively support these children and families.

Additionally, children in the present study who experienced multiple child welfare placements were less likely to attend subsidized child care, while controlling for types of child welfare placements, child age, and population density. The current study is the first to document this relationship; however, the notion that instability in child welfare placements hinders access of services is not surprising. The current study is not able to identify the reason(s) that children with more child welfare placements are less likely to attend subsidized child care, but one might

suspect that moving from one placement to the next would make it difficult for caregivers to access assistance services, which take time to apply for and receive.

In sum, findings from the present study indicate that children who live in out-of-home placements, and those that experience higher numbers of child welfare placements (a marker of instability), are less likely to attend subsidized child care than other children that are involved in child welfare services. As noted in Section 1 of this paper, child care subsidies may have important implications for child and family well-being. Evidence now clearly shows that families who access child care subsidies utilize more formal care arrangements, including center-based care, and less informal or relative care than other low-income families (e.g. Ertas & Shields, 2012; Ryan, Johnson, Rigby, & Brooks-Gunn, 2011; Shlay, Weinraub, Harmon, & Tran, 2004). Efforts are now underway across the country to ensure that subsidized child care is of high quality (US-DHHS, 2011a, 2012). Child care subsidies also have the potential to play a supportive role in the lives of foster parents by addressing their need for day care services and enabling employment (NSCAW, 2003). Moreover, early care and education programs have been linked with reductions in child maltreatment, which has particular relevance for families involved in the child welfare system (Mersky, Berger, Reynolds, & Gromoske, 2009; Mersky, Topitzes, & Reynolds, 2011; Zhai, Waldfogel, & Brooks-Gunn, 2012). Thus, the implications of gaining access to child care subsidies for children involved in the child welfare system is of increasing importance.

6.2 Stability of child care subsidy use among children involved in child welfare services.

Findings from the present study point to less stable use of child care subsidies among children involved in child welfare services than among children from other families, controlling for household income, primary language, population density, and child age. Specifically,

children involved in child welfare had shorter spells of child care subsidy receipt, but no difference in the length of time between spells of subsidy use. The relative impact of child welfare involvement on duration of subsidy receipt was most noticeable in the first spell. The median survival time (the time at which 50% of the children had ended the subsidy spell and the other 50% continued) was approximately one month shorter for children involved in child welfare services than for other children. The magnitude of this difference was even larger when examining the time at which 75% of the children had ended the subsidy spell and the other 25% continued; the difference in this survival time between the two groups of children was approximately 5 months. Subsequent subsidy spells were shorter than the first spell, for all children overall, which resulted in smaller relative impact of child welfare involvement (even though the effect on the log hazard rate was constrained in the model to be constant across all “in” spells).

These findings extend prior research on child care subsidies. Results affirm that, among the broad spectrum of children from low-income families, receipt of child care subsidies typically involves short spells (e.g. Adams, et al., 2002, 2008; Chaudry, 2004; Davis et al., 2010; Grobe et al., 2008; Ha, & Meyer, 2010). The current study adds to this literature in two key ways. First, it expands knowledge of subsidy use among the full group of low-income families that access child care subsidies by statistically documenting that the duration of subsidy receipt decreases with children’s second, third, and subsequent spells. This pattern is repeated for “out” spells of subsidy non-use. In light of evidence that disruptions in subsidies are associated with disruptions in children’s actual care arrangements (Adams & Rohachek, 2002, 2010; Lowe, Weisner, & Geis, 2003; Weber, 2005), and parent employment (Blau and Robbins 1991; Hofferth & Collins, 2000; Meyers, Heintze, & Wolf, 2002; Scott et al., 2011), this cycle of

increasing instability of child care subsidy receipt across multiple subsidy spells could have important implications for child and family well-being.

The current study also extends prior research by documenting increased instability of child care subsidy use among children involved in child welfare services than among those who are not involved in child welfare. Additional instability in child care subsidies, specifically if it is linked to instability in actual child care arrangements, has the potential to exacerbate the negative influence of the high degree of instability already present in the lives of children involved in child welfare (e.g. Wulczyn, et al., 2002). This study was not able to identify the reasons for less stability in child care subsidy use among children involved in child welfare services. However, it is plausible that transitions between homes may precipitate disruptions in the use of child care subsidies, eligibility for which is tied to parents rather than to the children. Evidence from prior research lends credibility to this idea, suggesting that procedures and policies related to obtaining and retaining eligibility for child care subsidies may be a barrier to stable participation, both in Oregon and elsewhere (Adams et al., 2002; Grobe et al., 2008).

The current method of linking child care subsidies to parent employment and income is consistent with the original intent of the federal CCDF program, yet in light of the current findings, and the increasing national emphasis on the developmental outcomes of children who access subsidized child care, it may be worthwhile to at least consider alternative policies to promote stability of child care arrangements for the highly vulnerable children involved in child welfare services. Options that could be considered, if and when sufficient supporting evidence was available, include extending eligibility to all children in foster care, regardless of foster parent income or employment status (presently eight states have such a policy), or by allowing children to retain eligibility for subsidized care when they change family placements. The public

education system (Kindergarten through grade 12) employs a similar approach. The Fostering Connections to Success and Increasing Adoptions Act of 2008 (P.L. 110-351) requires child welfare agencies to ensure school stability for children in foster care, by coordinating with the schools so that children remain in the school in which they were enrolled at the time of placement unless doing so is contrary to the best interests of the child.

The current study provides an important foundation for future research by documenting child care subsidy use and stability among children involved in child welfare services. Inclusion of additional covariates that were not available in the present study will be important in future studies. For example, future work that includes employment, income, and race, when predicting use of child care subsidies among children involved in the child welfare system will be important. Replication of this work in states with more diverse populations of children and families will also be important. Additionally, the current study is not able to make causal attributions about the role of child welfare involvement in the stability of child care subsidies. Future research should take the next step of examining real-time linkages between children's transitions in child welfare placements and their entries into and exits from the child care subsidy system. This approach would also allow for examination of the role of various types of child welfare placements, including both kinship and non-kinship foster care, in access to, and stability in subsidy use over time.

Cross-state analysis of child care subsidy policy would also be useful in understanding states' approaches to eligibility for child care subsidies among families involved in the child welfare system, and of the potential effects of policy on the stability of child care experiences for these vulnerable children. Oregon's child care subsidy policy does not include special provisions for children or families involved in the child welfare system. Examination of child care subsidy

use and stability among children involved in the child welfare system from states with special subsidy policies for children involved in child welfare, or foster care, could shed light on potential links between policies and stability of subsidy use.

The emergence of this new line of research at the intersection of child welfare and early care and education is timely. Recent memorandums of information and funding announcements at the federal level are encouraging collaborations between state child welfare and early childhood systems, including both child care and Head Start (US-DHHS, 2011b, c, d). Additionally, the recent federal Race to the Top Early Learning Challenge Grant highlighted children involved in child welfare services as a specific group of children with high needs for states to consider in efforts to improve access to quality early learning environments. Empirical evidence about the early care and education experiences of children involved in child welfare services is critical to the success of these, and related, efforts. The current study is an important building block for this emerging, highly applicable line of inquiry.

6.3 Conclusion

In conclusion, results from the present study indicate that children placed out of their biological homes through child welfare services, and those with more instability in child welfare placements, are less likely to attend subsidized child care than those protected in their homes. Findings further suggest that children involved in child welfare services have even less stability in child care subsidy use than other children from low-income families, evidenced by shorter durations of subsidy use. These findings provide a platform for future research in this area, and have implications for the well-being of children and families involved in child welfare services, whose lives involve a host of challenges, risks, and instabilities.

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Table 1

Logistic Regression Results for Predicting Child Care Subsidy Use among Children Involved in Child Welfare Services (n=27,337)

Predictor	<i>B</i> (<i>SE</i>)	<i>p</i>	<i>OR</i>
Age at 1st CW placement	-0.06 (0.00)	<.01	0.94
Population Density (0=Urban, 1=Rural)	-0.03 (0.04)	.36	0.97
Number of CW Placements	-0.11 (0.02)	<.01	0.90
Primary CW Care Type- Foster Care ^a	-1.31 (0.35)	<.01	0.27
Primary CW Care Type- Mixed ^a	-0.32 (0.04)	<.01	0.73
Primary CW Care Type- Other ^a	-1.06 (0.20)	<.01	0.35

^a Reference group = Children with in-home only child welfare placements.

Note. *OR*= Odds Ratio.

Table 2

Stratified Cox Regression Results for Predicting Hazard Rates of Time “In” and Time “Out” of Child Care Subsidy Use (n=45,914)

Predictor	Time “In”			Time “Out”		
	Child Care Subsidy Use			Child Care Subsidy Use		
	<i>B (SE)</i>	<i>p</i>	<i>hRR</i>	<i>B (SE)</i>	<i>p</i>	<i>hRR</i>
Child Welfare Involved (Yes=1, No=0) ^a	0.21 (0.05)	<.01	1.23	0.03 (0.07)	.65	1.03
Child Age ^b	-0.03 (0.00)	<.01	0.97	-0.02 (0.01)	<.01	0.98
Household Income ^b	-0.03 (0.02)	.08	0.97	0.00 (0.03)	.99	1.00
Minority Language (Yes=1, No=0) ^b	-0.16 (0.05)	<.01	0.85	-0.04 (0.06)	.49	0.96
Population Density (0=Urban, 1=Rural) ^b	0.04 (0.03)	.23	1.04	0.06 (0.04)	.18	1.06
Gender (Female=1, Male=0) ^b	0.00 (0.02)	.93	1.00	0.01 (0.03)	.88	1.01

Note. *hRR*= Hazard Rate Ratio

^a Coefficient for “in” and “out” spells is significantly different ($p = .03$).

^b Coefficient for “in” and “out” spells is not significantly different ($p > .05$).

Table 3.

“In” Spell Survival (Duration) Times (t) Corresponding to Model-estimated Survival Rates, $S(t)$, of 75%, 50%, and 25% for Children Involved and Not Involved in the Child Welfare System

	“In” Spell Duration Times in Days (t)		
	$S(t) = .25$	$S(t) = .50$	$S(t) = .75$
1st Child Care Subsidy Use Spell			
Children not involved in child welfare	90	181	486
Children involved in child welfare	88	151	336
2nd Child Care Subsidy Use Spell			
Children not involved in child welfare	29	59	121
Children involved in child welfare	29	59	90

Note. The median survival time is the value of t such that $S(t) = .50$; that is, the time at which 50% of the population is continuing a given subsidy use “in” spell and 50% have ended that same “in” spell.

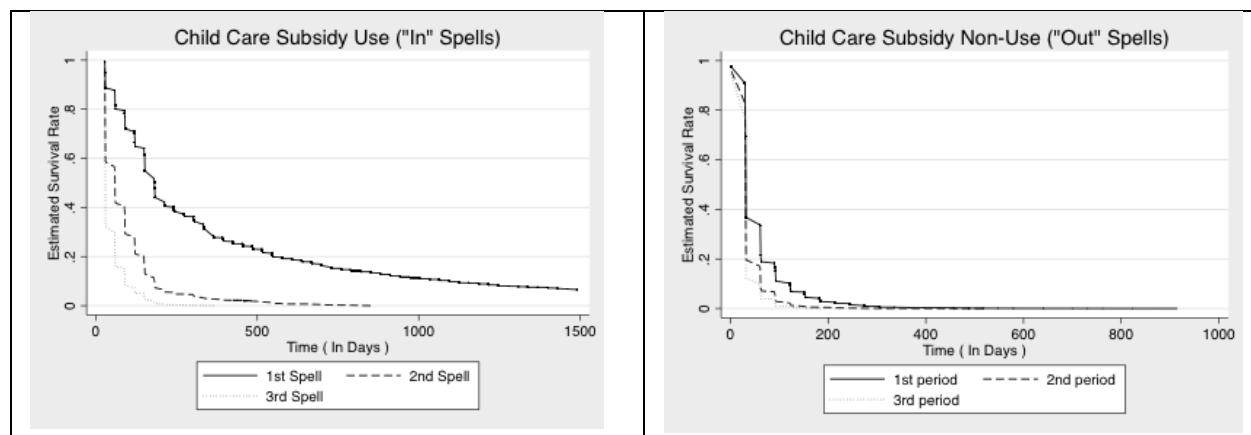


Figure 1. Model-estimated, covariate-adjusted survival rates for the first three “in” spells of child care subsidy use and the first three “out” spells of non-use.

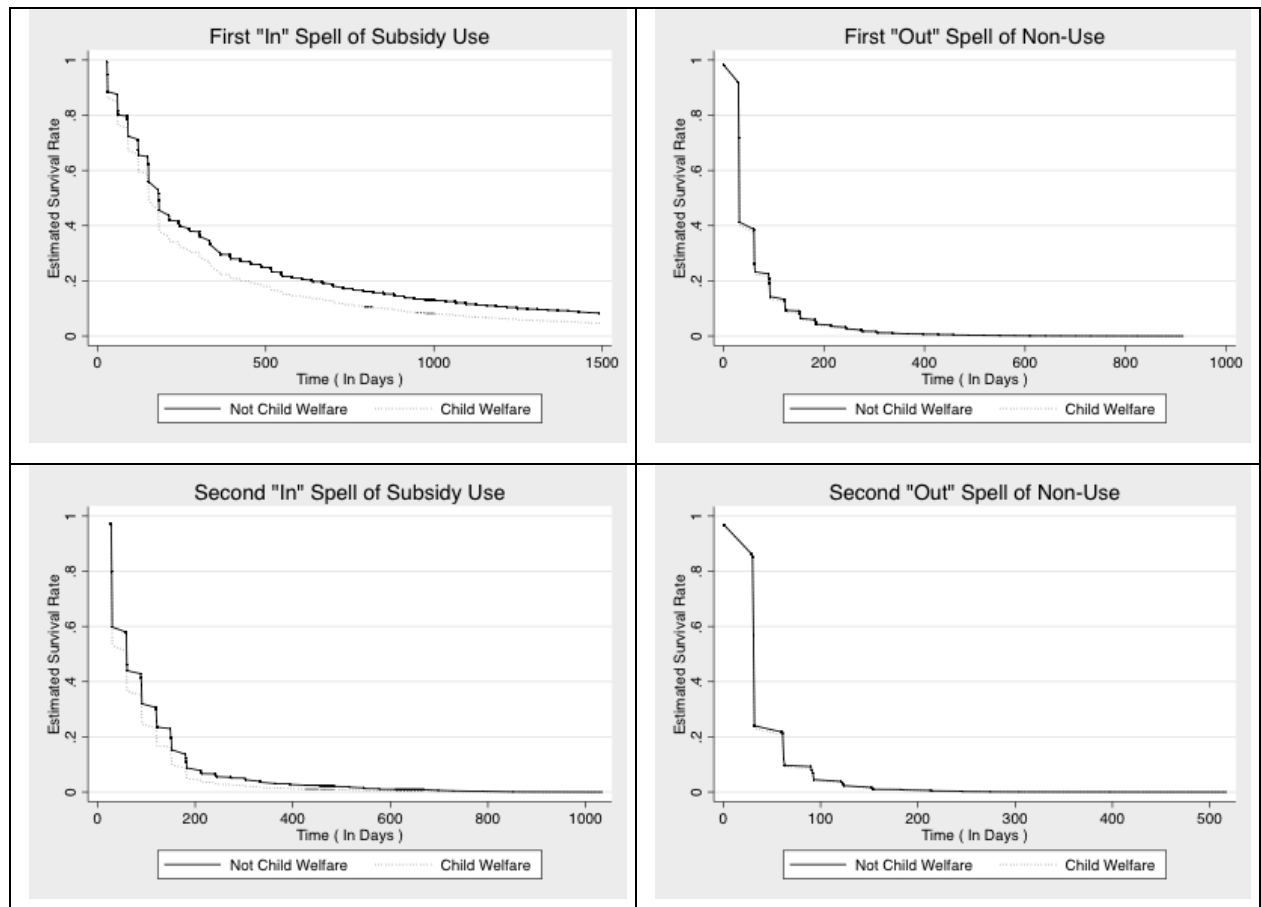


Figure 2. Model-estimated, covariate-adjusted survival rates for the first two “in” spells of child care subsidy use and the first two “out” spells of non-use for children involved in the child welfare system and for children not involved in child welfare.